



U.S. Department of Energy
Energy Efficiency and Renewable Energy

Identifying High-Performance LED Products

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U.S. Department of Energy

*DOE Solid-State Lighting Market Introduction Workshop
Chicago, Illinois
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The Promise of Solid-State Lighting

- By 2030, potential to cut U.S. lighting energy use by one-third
- Cumulative energy savings: \$280 billion
- Annual energy savings equivalent to:
 - 348 billion kilowatt hours
 - Output of 44 1,000 MW power plants
 - Greenhouse gas emissions equal to 47 million cars
- Additional benefits
 - Global leadership in SSL technology
 - High-tech, value-added jobs





So What Could Go Wrong?

- LED products rapidly coming to market
 - Some are good, many do not perform as claimed
 - Exaggerated claims, confusion harm market acceptance
- Lessons learned from market introduction of CFLs
 - Credible information is key
 - Collaboration reduces confusion
 - Focus on applications where LEDs can meet or exceed expectations





How Can DOE Help?

- Programs provide unbiased information, education, tools
 - CALiPER reports offer independent test results, analysis of market trends
 - Quality Advocates promote truth in advertising
 - Design competitions recognize quality products
- Growing arsenal of reports, analysis, product lists



CALiPER



lighting
facts
SSL Quality Advocates



LIGHTING
for
tomorrow



NGL2008

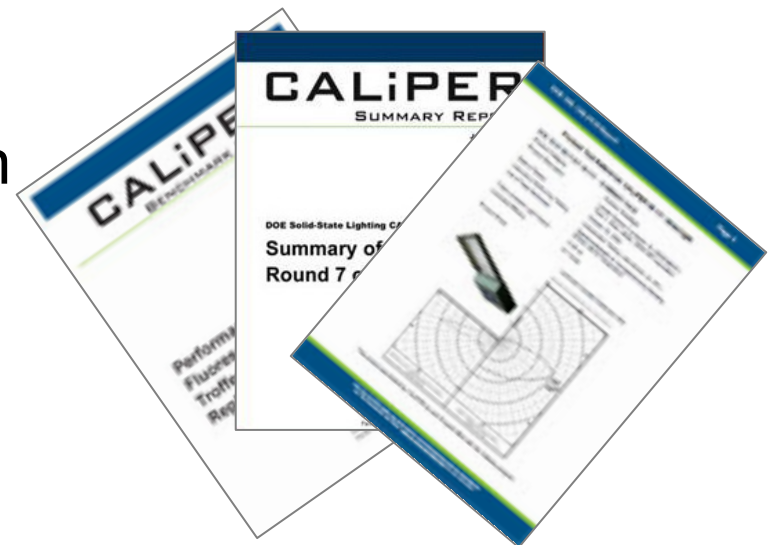


L•PRIZE™



CALiPER Reports

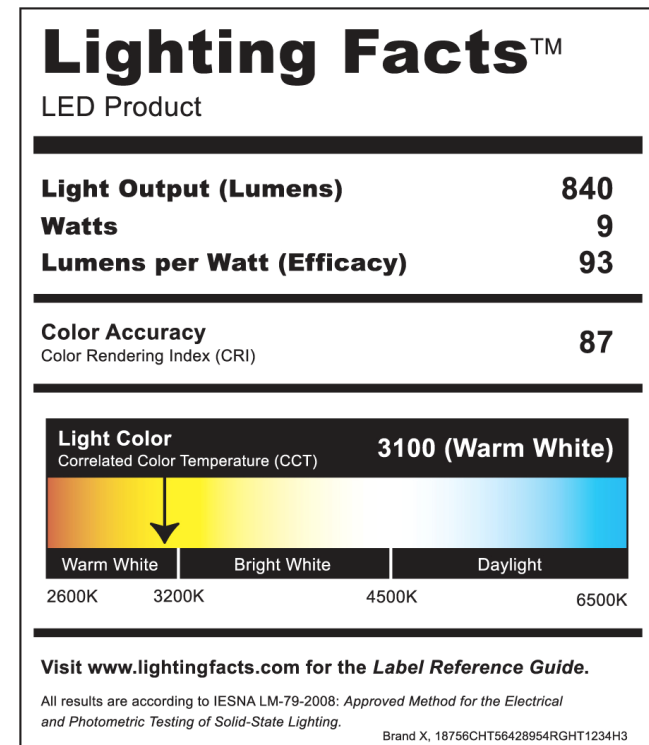
- Detailed test reports: Performance results for hundreds of products tested
- Summary reports: Analysis of all products tested in each round
- Benchmark reports: Analysis of results for both LED and traditional products in a given application
- Long-term and reliability testing: Examination of lumen depreciation patterns, efficacy and color shift, cycling, dimming





SSL Quality Advocates

- Product performance reporting initiative
- Quality Advocates pledge to:
 - Support objectives for SSL quality
 - Use Lighting Facts™ label, or ask for it
 - Continue to work on quality improvement
- Five key parameters: lumens, watts, efficacy, CRI, CCT
 - Additional metrics under consideration





Join the SSL Quality Advocates

- Growing list of partners
- Manufacturers, retailers, distributors, lighting designers, efficiency programs, utilities
- Sign up at www.lightingfacts.com

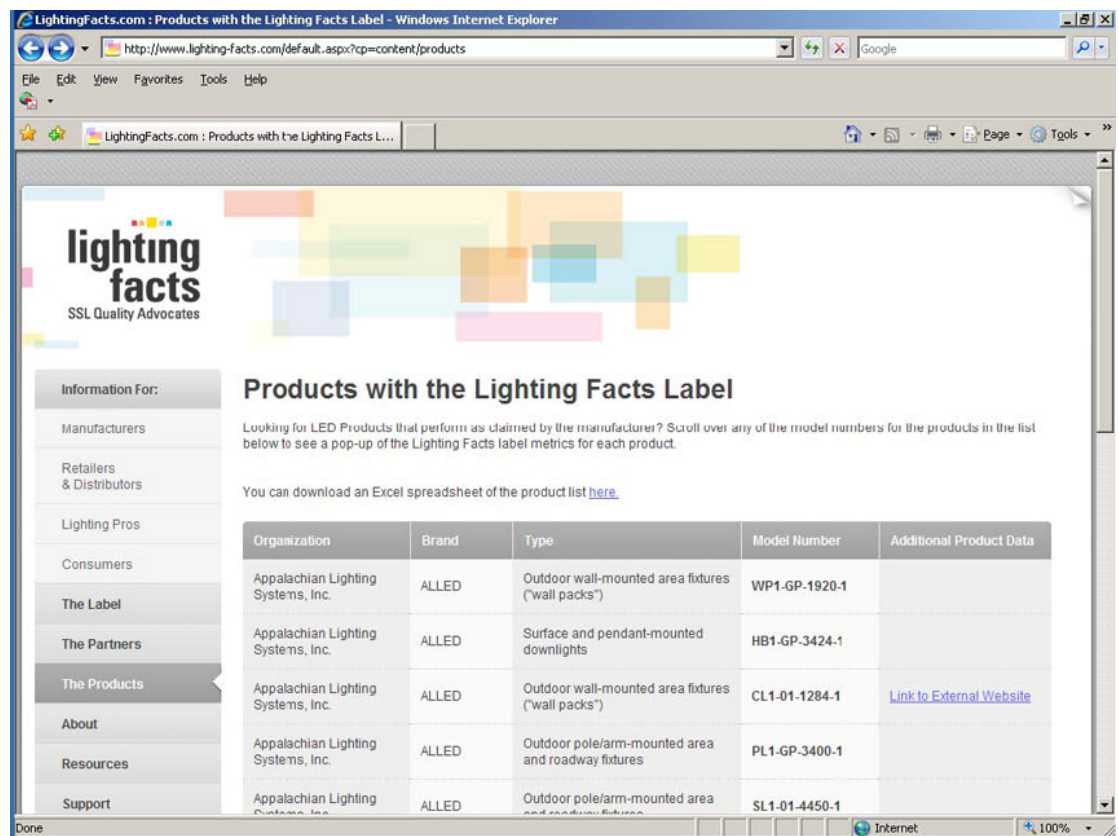


MANUFACTURERS	BUYERS
Cree Inc. CRS Electronics io Lighting Lighting Sciences Group LSI Industries Philips Color Kinetics Progress Lighting Ruud Lighting Technical Consumer Products	Cape Light Compact Efficiency Maine Efficiency Vermont Grainger Industrial Supply Lightswitch Architectural Midwest Energy Efficiency Alliance (MEEA) Northeast Energy Efficiency Partnerships NYSERDA PG&E Wisconsin Energy Conservation Corporation (WECC)



Products with the Lighting Facts Label

- Growing list of products
- Manufacturers agree to disclose product performance based on industry standardized testing (LM-79)



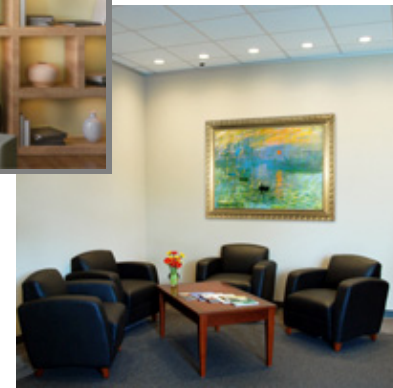
The screenshot shows the LightingFacts.com website in a Windows Internet Explorer browser window. The page title is "LightingFacts.com : Products with the Lighting Facts Label". The URL is "http://www.lighting-facts.com/default.aspx?cp=content/products". The page features the "lighting facts" logo with the tagline "SSL Quality Advocates". A sidebar on the left lists navigation options: "Information For:" (Manufacturers, Retailers & Distributors, Lighting Pros, Consumers), "The Label", "The Partners", "The Products" (selected), "About", "Resources", and "Support". The main content area is titled "Products with the Lighting Facts Label" and includes a description: "Looking for LED Products that perform as claimed by the manufacturer? Scroll over any of the model numbers for the products in the list below to see a pop-up of the Lighting Facts label metrics for each product." Below this, there is a link to download an Excel spreadsheet: "You can download an Excel spreadsheet of the product list [here](#)." A table lists the products:

Organization	Brand	Type	Model Number	Additional Product Data
Appalachian Lighting Systems, Inc.	ALLED	Outdoor wall-mounted area fixtures ("wall packs")	WP1-GP-1920-1	
Appalachian Lighting Systems, Inc.	ALLED	Surface and pendant-mounted downlights	HB1-GP-3424-1	
Appalachian Lighting Systems, Inc.	ALLED	Outdoor wall-mounted area fixtures ("wall packs")	CL1-01-1284-1	Link to External Website
Appalachian Lighting Systems, Inc.	ALLED	Outdoor pole/arm-mounted area and roadway fixtures	PL1-GP-3400-1	
Appalachian Lighting Systems, Inc.	ALLED	Outdoor pole/arm-mounted area and roadway fixtures	SL1-01-4450-1	



Lighting for Tomorrow: SSL Winners

- Sponsored by DOE, ALA, CEE
- Focus on residential lighting
- Competition requirements for lighting quality, efficiency, thermal management, aesthetics
- 2008 winners:
 - Cree LED Lighting Solutions: LR4 recessed downlight
 - Kichler Lighting: Design Pro Series™ undercabinet system
 - Luximo: Cylindrium desk/task light



LIGHTING
for
tomorrow



Next Generation Luminaires™ Winners

- Sponsored by DOE, IALD, IES
- Focus on commercial LED luminaires, specifiability
- Competition requirements for lighting quality, efficiency, aesthetics, serviceability
- 2008 Best in Class winners:
 - GE Lighting: Immersion™ jewelry case lighting
 - Journée Lighting: AZARA track-mounted luminaires
 - Winona Lighting: STEP03 indoor/outdoor step lighting





22 Market-Ready Products Recognized

	Manufacturer	LED Product	Description
BEST IN CLASS	GE Lighting	Immersion™	Jewelry case lighting
	Journée Lighting	AZARA	Track-mounted luminaires
	Winona Lighting	STEP03	Indoor/outdoor step lighting
	Albeo Technologies Inc.	C-Series LED High Bay	Linear high-bay lamp
	Amerlux Lighting Solutions	Evoke 2.9	1.25" diam. round or square downlight
	Amerlux Lighting Solutions	Cylindrix II LED	Round track lights
	Cree LED Lighting	LR24	24" square ceiling light
	Cree LED Lighting	LR4	4" round downlight
	Cree LED Lighting	LR6	6" round downlight
	Gallium Lighting LLC	GS6	6" square downlight
	GE Lighting	Architectural Cove Lighting	Linear cove lighting
	LED-Linear	Xoolux Donar	Undercabinet linear
	Lightolier	Calculite LED Downlight	4" round or square downlight
	MP Lighting	L161	1-ft to 4-ft linear fixture
	MP Lighting	LED72	Square track lights
	Philips Color Kinetics	eW Cove Powercore	Linear 6" and 12" for cove, display
	Philips Color Kinetics	eW Downlight SM Powercore	Square surface-mount downlight
	Philips Color Kinetics	eW Profile Powercore	Undercabinet linear
	Specialty Lighting Industries	1009-LED	4" square downlights
	Specialty Lighting Industries	1500-LED	2" round downlight
	Tech Lighting	LED Pendant	Pendant lamp, 40 shade options
	Winona Lighting	Winscape LED 16	Outdoor flood fixture





L Prize™

- Technology competition to spur innovation and exceptional performance
- Two key lamp replacements:
 - 60W Incandescent
 - PAR 38 Halogen
- Rigorous technical requirements and evaluation criteria
 - The bar is set high
 - Entries will reflect significant advances
- Cash prizes, federal purchasing, utility programs

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Learn more at www.ssl.energy.gov

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